



## Planning for an Emergency

by Jill C. Miller, Regional Coordinator

*Drinking Water Security and Emergency Preparedness*

Public water systems have a responsibility to provide safe drinking water to their customers. *The Public Health Security and Bioterrorism Preparedness and Response Act of 2002* requires all public water systems serving populations of greater than 3,300 people to have an emergency response plan (ERP). The State of South Carolina also requires all public drinking water systems to have developed an ERP and to keep that document accessible in the event of an emergency. The role of an ERP is to have response actions mapped out for specific emergencies prior to their occurrence and to ensure these actions are carried out in a timely and effective way.

### Emergency Response Plan Components

The ERP should:

- locate all water system assets
- have an internal and external contact phone list
- describe methods and procedures for public notification through the media
- identify all critical customers, including their locations and phone numbers
- identify alternative potable water sources
- arrange for an emergency power source
- list and locate repair and back-up equipment
- list potential emergency repair contractors and their phone numbers
- identify potential mutual aid agreements with neighboring utilities
- describe emergency sampling and analysis procedures

- list available laboratories and their capabilities, and
- describe emergency specific action scenarios.

**“Emergency training of water utility personnel is one of the most critical facets of an Emergency Response Plan.”**

Emergency Response Plans should specifically address and plan for issues resulting from natural disasters; spills and hazardous material releases; intentional contamination of the water source or distribution system; attacks on water system personnel or property; cyber-threats; and other system specific possibilities. For each possible emergency situation, the ERP should discuss:

- the chain of command
- appropriate contact information for internal and external communications
- specific actions to be taken to assess, contain, and mitigate the problem and to resume normal operating conditions
- an inventory of back-up and repair equipment
- potential alternative drinking water sources in the case of prolonged incapacity, and
- public notification procedures.

Several copies of these emergency specific procedures can be placed on file so that they can be utilized as “Rip and Go” directions for water system personnel.

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## Upcoming Events

### AWWA/WEA

#### SC Environmental Conference

March 21 – 24, 2004

Myrtle Beach, SC

For more information, call  
(803) 540-1888

### SC Environmental Certification Board

#### Open Exam Schedule for 2004

[www.llr.state.sc.us/POL/  
Environmental/ecoexam4.pdf](http://www.llr.state.sc.us/POL/Environmental/ecoexam4.pdf)

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### Coordinating with Local Emergency Planning Entities

During the preparation of the ERP, external response activities should be coordinated with Local Emergency Planning Committee (LEPC) members and local law and fire department officials. This coordination activity is essential for awareness of critical asset locations and determination of local emergency response capabilities. A completed copy of the ERP should be shared with the LEPC for personnel training and emergency response coordination.

Emergency training of water utility personnel is one of the most critical facets of the ERP. All personnel should be familiar and comfortable with their responsibilities as described in the plan. All questions should be addressed prior to the occurrence of an emergency and implementation of the plan. Drills and mock emergencies are important exercises to be performed in order to raise the comfort level and awareness of the employee and to practice emergency specific procedures and actions.

### Continued Updating of the Plan

Remember, the ERP is always a working document (i.e., a work in progress). As utilities are updated, personnel capabilities change, and external contacts and numbers become obsolete.

The plan must reflect these changes. ERP updates need to be shared with appropriate staff and emergency responders.

### Development Resources

There are several resources available to public water systems that may assist in the development of the ERP. The U.S. Environmental Protection Agency has developed a guideline entitled *Large Water System Emergency Response Outline: Guidance to Assist Community Water Systems in Complying with the Public Health Security and Bioterrorism Preparedness and Response Act of 2002*. This document can be accessed via the following web address: [www.epa.gov/safewater/security/pdfs/erp-long-outline.pdf](http://www.epa.gov/safewater/security/pdfs/erp-long-outline.pdf).

The National Rural Water Association has developed the *Small Rural Water and Wastewater Emergency Response Plan Template* that can be viewed and downloaded at [www.vulnerabilityassessment.org/compackage.htm](http://www.vulnerabilityassessment.org/compackage.htm) by clicking on the ERP template bullet.

To access an online version of the *State of South Carolina Primary Drinking Water Regulation* for state specific requirements (R.61-58.8), see [www.scdhec.gov/water/html/reg.html#dw](http://www.scdhec.gov/water/html/reg.html#dw).

## Trihalomethane and Haloacetic Acid Requirements

by Vivianne Vejdani,  
*Drinking Water Compliance*

As of January 1, 2004, all small surface water systems (SWS) (i.e., systems that serve less than 10,000 people) and all ground water systems (GWS) that apply disinfection during any part of the treatment process are required to comply with a maximum contaminant level (MCL) for trihalomethanes (TTHMs) and Haloacetic Acids (HAA5s). The MCL for TTHMs is 0.080 mg/L and 0.060 mg/L for HAA5s.

The monitoring frequency for these disinfection byproducts depends upon the population served by the water system. TTHM and HAA5 samples will be collected either quarterly or annually (depending on the number of customers served) by appropriate DHEC personnel and will be analyzed by either a state or contract lab. DHEC will notify systems of their sample

results and compliance status at the end of each monitoring period. However, it is the water system's responsibility to track their compliance with the above listed MCLs.

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***"It is the water system's responsibility to track their compliance in accordance with MCLs."***

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Monitoring will be conducted at "maximum residence time" sites (M-site). An M-site is a site that represents the maximum residence time of water in the distribution system. The required number of M-sites is dependent upon one of two criteria:

- the number of physical locations where disinfectant treatment is applied (i.e., "treatment plant"), or
- the number of aquifers from which the source water is drawn (where known).

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## Trihalomethane

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The requirement is one (1) M-site *per treatment plant*; however, where multiple aquifers can be determined, the requirement is one M-site *per aquifer*. For example, if a system has two treatment plants but draws from one aquifer, then only one (1) M-site would be required. Each M-site will be the location of the maximum residence time of water in relationship to the most proximal plant.

All surface water systems (SWS) and ground water systems (GWS) that apply disinfectant should have already reported their M-site(s) to DHEC. If your system uses disinfectant during any part of the treatment process and has not provided DHEC with the above M-site information, the system will not be monitored and will not be in compliance until the appropriate information is received.

For more information, please contact Vivianne Vejdani at (803) 898-4156 or e-mail [vejdanh@dhec.sc.gov](mailto:vejdanh@dhec.sc.gov).

## Interest Rates Lowered

### South Carolina State Revolving Fund Interest Rates for FY 2004

#### Drinking Water Facilities

##### 2.50% Standard Rate

Applies to systems with a population of more than 10,000, and systems (regardless of size) with a median household income (MHI) greater than the state MHI (\$37,082).

##### 1.50% Small System Rate

A new incentive rate for small systems serving populations of less than 10,000 and having a system MHI less than the state MHI. There is an optional extension of term to useful life, up to 30 years.

##### 1.00% Hardship

Applies to systems with a population of less than 10,000, a system MHI less than the state MHI; and a level of effort (LOE) of more than 1.15%. There is a required extension of term to useful life, up to 30 years.

##### 1.00% Capacity Development Rate

Applies to a take-over of any non-viable community water system.

#### Waste Water Facilities

##### 3.00% Standard Rate

Applies to systems with a population of more than 10,000 and all systems (regardless of size) with MHIs greater than the state MHI (\$37,082).

##### 2.00% Small System Rate

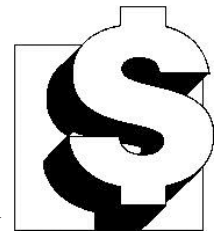
A new incentive rate for small systems and the take-over of non-viable systems. Requirements are a system population of less than 10,000 people; a system MHI less than the state MHI; or a take over of an entire nonviable wastewater system serving residential customers, regardless of population size or MHI.

##### 1.00% Hardship Rate

Applies to systems with populations of less than 10,000; a system MHI less than the state MHI; and an LOE more than 1.15 %. The LOE is the annual cost of a sewer based on 6,000 gallons monthly usage divided by the system MHI.

##### 2.00% Nonpoint Source

Applies to nonpoint source projects (such as stormwater) for up to \$4 million per rate borrower. Twenty-five percent of the cost must apply to best management practices.



For more information, call Tom McDonough at (803) 898-4038, or visit our Web site at [www.scdhec.net/html/dwsrf.html](http://www.scdhec.net/html/dwsrf.html).



## LID, A New Approach to Stormwater Management

by Neil Weinstein, Exec. Director,  
LID Center

**L**ow Impact Development (LID) is a comprehensive technology-based approach to managing urban stormwater. This approach combines a hydrologically functional site design with pollution prevention measures to compensate for land development impacts on hydrology and water quality. Stormwater is managed in small, cost-effective landscape features located on each lot rather than being conveyed and managed in large, costly pond facilities located at the bottom of drainage areas. This unique micro-management source control concept is quite different from conventional end of pipe treatment or conservation techniques.

LID is not a growth management program. It does not rely on density restrictions or clustering. Instead, LID focuses on how the developed area of a

site is planned and designed to minimize hydrologic impacts. It uses a variety of site design and pollution prevention techniques to create a hydrologically functional and environmentally sensitive landscape.

### Goals and Principles of LID

The primary goal of LID is to mimic the predevelopment site hydrology by using site design techniques that store, infiltrate, evaporate, and detain runoff. Use of these techniques helps to reduce off-site runoff and ensure adequate groundwater recharge. Since every aspect of site development affects the hydrologic response of the site, LID control techniques focus mainly on site hydrology.

Some of the main goals and principles of LID:

- Provide an improved technology for environmental protection of receiving waters.
- Encourage public education and participation in environmental protection.
- Reduce construction and maintenance costs of the stormwater infrastructure.

- Introduce new concepts, technologies, and objectives for stormwater management such as micromanagement and multi-functional landscape features (bioretention areas, swales, and conservation areas); mimic or replicate hydrologic functions; and maintain the ecological/biological integrity of receiving streams.

### Additional Information

The *Low Impact Development Design Strategies* manual was developed to provide a reference and a model for practitioners to use in experimenting with and applying LID techniques across the nation. Download the manual at [ftp://lowimpactdevelopment.org/pub/LID\\_National\\_Manual.pdf](ftp://lowimpactdevelopment.org/pub/LID_National_Manual.pdf) or contact Neil Weinstein, Executive Director, Low Impact Development Center at [nweinstein@lowimpactdevelopment.org](mailto:nweinstein@lowimpactdevelopment.org) or call (301) 982-5559.

**This article was adapted with permission from *Low Impact Development Design Strategies: An Integrated Design Approach Manual*.**

## Drinking Water Projects Funded in 2003

In fiscal year 2003, the following projects were awarded loans from the Drinking Water State Revolving Fund (SRF):

### **Beaufort-Jasper Water & Sewer Authority Chechessee River Crossing (\$1,176,665)**

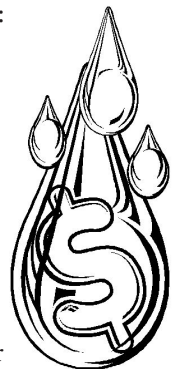
Aging sub-aqueous pipe crossing the Chechessee River was replaced with new pipe directionally drilled.

### **Beaufort-Jasper Water & Sewer Authority Purrysburg 36-Inch Transmission Main (\$4,256,018)**

The new treatment plant was linked with the existing transmission system via a new 36-inch pipe.

### **City of Florence Pee Dee Regional Raw Water Storage (\$2,517,834)**

The need for raw water storage was satisfied by construction of a 15- to 30-million gallon raw water storage reservoir and a 15 million gallon-per-day raw water transfer pump station.







## Disinfection Residual Monitoring Requirements

by Vivianne Vajdani,  
Drinking Water Compliance

As of January 1, 2004, all surface water systems (SWS) serving a population of less than 10,000 and all groundwater systems (GWS) that use disinfection are required to comply with disinfection residual monitoring requirements under the *Stage 1 Disinfectants/Disinfection Byproducts Rule*.

### Requirement

Specifically, systems are required to take monthly disinfection residual measurements at the *same* sampling points and *at the same time* as their total coliform samples are collected. Disinfection residual samples must be analyzed in the field at the time of collection. This requires that the individual performing the analysis be certified through DHEC's

Office of Environmental Laboratory Certification. For information on how to become certified, contact Carol Smith at (803) 896-0850 or e-mail her at [smithcf@dhec.sc.gov](mailto:smithcf@dhec.sc.gov).

### Variance of Certification

Your system is eligible to receive a variance for the certification requirement from DHEC until June 30, 2004. The variance will allow time for you to become certified by DHEC Lab Certification to collect and read disinfection residuals **or** to contract with a DHEC certified lab that is certified to collect and read disinfection residuals. For more information and a variance application, contact Vivianne Vajdani at (803) 898-4156.

### Monthly Operation Report

Regardless of your decision, this does not eliminate the requirement to submit a Monthly Operation Report (MOR) that indicates that a disinfection residual sample has been collected and analyzed at the same time as each bacteriological sample has been collected. In addition to

the bacteriological report, the MOR must be completed and submitted to DHEC no later than the 10<sup>th</sup> day of the month following the month for which the report is completed. Please submit the MOR to:

South Carolina Department of Health  
and Environmental Control  
Bureau of Water,  
Drinking Water Compliance  
Monitoring Section  
Attn: Vivianne Vajdani  
2600 Bull Street  
Columbia, SC 29201-1708

### Sample MOR Available

If you are a groundwater system that disinfects and did not receive a certified letter dated October 1, 2003 that included a sample MOR with instructions, please contact Vivianne Vajdani at the number listed above or e-mail [vejdanvh@dhec.sc.gov](mailto:vejdanvh@dhec.sc.gov).

## Enforcement Division Report

During July 1, 2003–September 30, 2003, the Enforcement Division issued 3 Consent Agreements, 64 Consent Orders, 14 Administrative Orders and 0 Emergency Orders. The Water Enforcement Division assessed approximately \$1,032,573.00 during the third quarter of 2003.

More information about enforcement activities within DHEC may be found at [www.scdhec.gov/eqc/admin/html/eqcmain.html#Enforcement](http://www.scdhec.gov/eqc/admin/html/eqcmain.html#Enforcement).

	*(CA)	(CO)	(AO)	(EO)
Agricultural Facilities		3	1	
Dams and Reservoirs				
Drinking Water		7	3	
Groundwater	3		1	
Recreational Waters		5	1	
Residential Wells		4	2	
Stormwater & Sediment Control		7	4	
Wastewater		38	2	

\*Consent Agreement/Consent Order/Administrative Order/Emergency Order

## NETCSC Lists Regulations Affecting Small Systems

If you want to know what water and wastewater regulations affect small communities, here is an easy way to find out. The National Environmental Training Center for Small Communities (NETCSC) offers a list of 23 rules and policies. This helpful list describes applicable regulations; the size of communities affected; specific rules for different size communities; and current, upcoming, and future Safe Drinking Water Act and Clean Water Act regulatory dates. Visit their Web site at [www.nesc.wvu.edu/netcsc/netcsc\\_Regs.html](http://www.nesc.wvu.edu/netcsc/netcsc_Regs.html).

## Bureau of Water Telephone Numbers

**Main Telephone Number**  
(803) 898-4300

**Main Fax Number**  
(803) 898-4215

### EQC District Offices

<b>APPALACHIA I</b> .....	<b>(864) 260-5569</b>
Anderson, Oconee	
<b>APPALACHIA II</b> .....	<b>(864) 241-1090</b>
Greenville, Pickens	
<b>APPALACHIA III</b> .....	<b>(864) 596-3800</b>
Spartanburg, Cherokee, Union	
<b>CATAWBA</b> .....	<b>(803) 285-7461</b>
Lancaster, Chester, York	
<b>CENTRAL MIDLANDS</b> .....	<b>(803) 896-0620</b>
Richland, Lexington, Newberry, Fairfield	
<b>EDISTO SAVANNAH</b> .....	<b>(803) 641-7670</b>
Aiken, Orangeburg, Barnwell, Bamberg, Allendale, Calhoun	
<b>LOW COUNTRY</b> .....	<b>(843) 846-1030</b>
Beaufort, Jasper, Colleton, Hampton	
<b>PEE DEE</b> .....	<b>(843) 661-4825</b>
Florence, Dillon, Marion, Marlboro, Darlington, Chesterfield	
<b>TRIDENT</b> .....	<b>(843) 740-1590</b>
Charleston, Berkeley, Dorchester	
<b>UPPER SAVANNAH</b> .....	<b>(864) 223-0333</b>
Greenwood, Abbeville, Laurens, Saluda, Edgefield, McCormick	
<b>WACCAMAW</b> .....	<b>(843) 448-1902</b>
Horry, Georgetown, Williamsburg	
<b>WATEREE</b> .....	<b>(803) 778-1531</b>
Sumter, Kershaw, Lee, Clarendon	

### For Information Call . . .

#### Lead & Copper

Leslie Owens (803) 898-4149

#### Bacteriological Monitoring Program

Idris Liban (803) 898-3573

#### THM and SWTR compliance

Vivianne Vejdani (803) 898-4156

#### Radiological compliance

Patrick Metts (803) 898-3794

#### IOC, VOC, and SOC compliance

Wendi Smith (803) 898-3572

#### State Safe Drinking Water Act Fees

Susan Alder (803) 898-3554

#### Backflow Prevention and Cross Connection Control

John Watkins (803) 898-3567

#### Permitting of sources and treatment

Shawn Clarke (803) 898-3544

#### Permitting of water distribution lines

Wayne Stokes (803) 898-4159

#### Status of permit applications

Patty Barnes (803) 898-3550

#### Disinfectants/Disinfection By-product Rule

Doug Kinard (803) 898-3543